"Daniel McKeel, M.D." <dan@wubios.wustl.edu> on 10/04/2001 11:34:13 PM

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To: YMP_SR@ymp.gov
cc: Daniel McKeel <dan@wubios.wustl.edu>, luez@aol.com

Subject: Yucca Mountain public comment

Part of Records Package / Supplement / Correction

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Carol Hanlon
US Department of Energy
Yucca Mountain Site Characterization Office
(M/S #025)
P.O. Box 30307
North Las Vegas, NV 89036-0307

Dear Ms. Hanlon:

I am writing to discuss my concerns that lead me to strongly urge the Yucca Mountain site not be selected as a nuclear waste repository. Before I do so, I want to express my sincere thanks to DOE for doing an excellent job of sending me information about the Yucca Mountain project. The department's efforts to solicit and consider public opinion deserves commendation. I also participated in the January 2000 DOE hearing held about the transportation routes in St. Louis and appreciated this opportunity to comment in public on the Yucca Mountain project and its possible adverse human health effects.

In addition to expressing my opinion as a U.S. citizen, I am also an M.D. pathologist and neuropathologist on the faculty of Washington University School of Medicine since 1974. I am a tenured Associate Professor in the Department of Pathology and Immunology at WUSM and have personally performed thousands of human autopsies. Therefore, I speak also as an informed physician who has been involved in nuclear issues for several years. In particular, I have an intimate understanding of the potential human health risks the Yucca Mountain plan entails. As a general statement, I find the assumptions underlying your postulated accident scenarios often unrealistic and the risks to be frequently underestimated.

My major more specific concerns are the following:

[1] Yucca Mountain has been the only repository considered. Other options, including the one I favor of leaving commercial nuclear wastes in place, were considered only superficially in DOE documents. I am unconvinced this latter option was really seriously considered at all. I challenge DOE to prove the Yucca Mountain repository was not chosen primarily to serve commercial nuclear power interests as advocated for decades by industry lobbyists. I and many other people believe that commercial nuclear power was fatally flawed from the outset by the failure to heed the obvious problem that continued operation would generate more and more low and high level waste. NRC had full knowledge this

waste could not be disposed of safely or at all when the plants were first licensed.

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[2] The terrorist commercial airliner attacks of September 11th that leveled the twin World Trade Centers and part of the Pentagon building are convincing evidence of the inadequacy of DOE considerations for terrorist attack scenarios at Yucca Mountain. News stories during the last few weeks have documented that nuclear power plant containment buildings might rupture if a fuel laden commercial airliner flew into them. I consider this to be a likely terrorist scenario. It will occur to terrorists that a similar type of attack on a larger scale at Yucca Mountain is clearly an effective way to create extreme havoc and panic among the U.S. population. The damage would include seismic and thermal shock. One plane was enough to bring down a 110 story building<what additional seismic and thermal forces would be generated if multiple planes struck the mountain at the same time? Would they allow a criticality incident? Could that happen? The answer from everyone in the U.S. would be a resounding ³yes.² Again, unless DOE has 100% satisfactory answers to these questions, it would be morally reprehensible to go forward with the Yucca Mountain repository site approval and implementation plan at this time. [also see related concern #3]

I predict an attack of the WTC-Pentagon type has a very high chance of happening during the next 30 years. If DOE says otherwise, the onus is upon your agency to produce convincing evidence to the contrary. If your agency cannot do so, then proceeding with the Yucca Mountain repository plan is irresponsible and merits criminal punishment if you are proven wrong. These are strong words, but I believe recent events make them necessary and prudent to tell DOE not to enact a plan that will expose the public to possible total annihilation. The minimum evidence DOE needs to have in hand are accurate impact, temperature and seismic calculations of four to six fuel-laden 757 class airliners loaded with jet fuel crashing into Yucca Mountain when it is loaded to 25%, 50%, 75% and 100% capacity. What will these forces do to the storage casks and fragile topography? How will the rate of groundwater flow increase from the repository into the underlying groundwater only 800 feet below? One would imagine huge rents would occur that might quickly extend down to the aquifer. Data from underground nuclear tests should prove valuable here.

The effects on the ³too hot² nuclear wastes that may be ³cooling down², which I understand are to be left outside the underground site for 50 years in order to achieve ³thermal load balancing², should be included in this calculation. The calculations should include temperature elevations equivalent to WTC single plane figures multiplied by an incremental factor that adjusts for multiple airliners crashing into strategic portions of the YM repository simultaneously. Seismic calculations should include numbers from the WTC experience<the

whole world saw the amazing, and unsuspected, amount of collateral damage to many buildings near the WTC twin towers.

[3] The risk to public safety of having a train with nuclear waste go through St. Louis every other day for 30 years is clearly unacceptable to the St. Louis, Missouri and East St. Louis, Illinois populace. Train derailments are common occurrences in this greater metropolitan area. A nuclear train wreck could have disastrous consequences. Suppose a terrorist attack occurred on such a train as it went across the Mississippi River? DOE has said the nuclear waste casks are impervious to temperatures up to 1400 F. Yet temperatures in the recent Baltimore tunnel train derailment were measured at slightly above that level. I have told this fact about the huge number of St. Louis nuclear shipments and people have been surprised, then have become aghast, then angry that DOE and the U.S. government would so risk their safety. People are afraid of the Yucca Mountain plan, and in my mind this fear is fully justified. Adequate emergency preparedness is just not there nor is it a safe fully fail-safe plan.

[4] All state of Nevada major elected officials are unanimously against the Yucca Mountain plan and have been very vocal in expressing their concerns from it¹s outset. DOE has ignored these sensible pleas and appears

determined to push this plan forward regardless of the manifest opposition of people and their representatives whose lives are most at risk, the citizens of the state of Nevada. What ever happened to President Bush¹s concerns for states rights? What happened to the concept of environmental justice? Surely the Nevada test range is sufficient nuclear impact for any state to have to bear. Yet again, DOE appears bound and determined to push this unwanted project onto the state. I strongly object to these ³bully² tactics that are not based on good science or national policy but rather are driven by self serving nuclear industry lobbyists, many of whom are former DOE and NRC employees.

[5] Evidence produced by many people who testified at the St. Louis DOE public hearing challenged DOE¹s assertion of low seismic activity in and around Yucca Mountain. I believe the DOE assumptions are overly optimistic and that seismic events pose a far greater risk to Yucca Mountain storage casks, causing them to rupture and leak into the groundwater, than DOE is willing to admit.

[6] Storing the high level radioactive waste they generate at the 103 U.S. commercial plant sites makes the best sense. This option avoids transporting large amounts of high level nuclear waste in casks and by means that have not been fully tested under likely conditions we are now aware of in terrorist attacks that

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have happened. It would be impossible to monitor and quickly respond to a nuclear accident on a train moving through the western plains, for example, far away from any major city. The very fact that nuclear plant sites are dispersed around the country mitigates against a devastating single strike. Placing all high level waste deep inside, and outside, of Yucca Mountain, invites such an attack. One might as well sculpt a huge target ³&² or an ³X² on the mountain at the repository site to assist attackers to get to their objective.

[7] I am offended and chagrined that medical doctors<physicians<who are most knowledgeable about radiation induced pathologic effects on humans, are hardly represented on your expert panels for Yucca Mountain. With all due respect, health physicists know how to calculate radiation exposures very well. They are not trained as physicians, however, and therefore lack the expertise to know about the full spectrum of pathology one would expect from different accident scenarios or from exposures to contaminated air, soil or groundwater radioactive releases. Because of this fundamental failure to get sufficient input from qualified physicians, all of the DOE risk assessments to human health are flawed and inadequate. And, of course, this is the most important aspect of all. What would happen if a major accident, a criticality event, occurred? We certainly know from the Japan and Chernobyl experience that a high rate of thyroid cancer can be expected around the globe. If the releases were massive, fallout would be much greater and secondary cancer incidence would be increased even further with multipe types of cancers showing an increase. The assumptions regarding cancer risks are absurdly low. Knowledgeable physicians will scoff at your simplistic and unrealistically benign risk assessments to human health. DOE (and ATSDR) have very little credibility in this regard. The analytic approach is so superficial that I don¹t even give credit to DOE that a serious effort has been made to estimate true risks of adverse human health effects.

Thank you again for allowing me to express my concerns. I hope and pray this project will be halted and the Yucca Mountain high level nuclear waste repository will be put on hold indefinitely until far better risk assessments and containment technologies can be thoroughly researched, justified and implemented.

Sincerely,

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